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ABSTRACT

An explanation is presented of the efforts performed by the Tennessee Technological University in conducting follow-up studies of its teacher education program graduates. A history of follow-up studies dating from 1964 is given, and a list is provided of special studies undertaken to assist in program development and redesign and to meet the standards of the National Council for the Accreditation of Teacher Education. The original University Teacher Evaluation Model, developed by J. T. Sandefur, and subsequent revisions, are discussed. Applications (program modifications and curricular changes) of the results of various studies at the graduate and undergraduate levels are listed. Future trends in follow-up study activity are briefly noted. Project costs in the 1975-76 period are summarized, and methods of implementing follow-up studies on a limited budget are suggested. A summary fact-sheet concerning the University follow-up and sampling procedure concludes the paper. (MJB)

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FOLLOWUP STUDIES AT TENNESSEE TECHNOLOGICAL UNIVERSITY

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The problem of the evaluation of graduates of teacher education programs has been a concern of institutions of higher education for a number of years. Traditionally evaluation efforts have consisted primarily of mailed questionnaires which solicited responses from graduates and/or supervisory personnel regarding effectiveness of the teacher education program.

Historically, systematic evaluation of the graduates of the teacher education programs of Tennessee Technological University dates back to 1964 when a mail followup study was conducted of the graduates for the period 1958-1963. Prior to this time the evaluation efforts of the institution had been limited to information gathered about the performance of graduates through informal contacts with the college faculty and through contacts with principals, supervisors, and superintendents. From the period 1964 through 1969, the College of Education conducted yearly followup surveys of the graduates of the teacher education programs through the use of mail questionnaires.

The need for institutions of higher education to evaluate their teacher education programs was given added emphasis in 1970 when the new Standards for Accreditation of Teacher Education were adopted by the National Council for Accreditation of Teacher Education (NCATE). Standard 5.1 is prefaced by the following.

> The ultimate criterion for judging a teacher education program is whether it produces competent graduates who enter the profession and perform effectively. An institution committed to the preparation of teachers engages in systematic efforts to evaluate the quality of its graduates...when they complete their programs of study, and after they enter the teaching profession.[1]

Standard 5.1 states that "The institution conducts a well-defined plan for evaluating the teachers it prepares."[2]

In 1970, in order to meet the NCATE standards, gather curriculum evaluation data and sufficient information for curriculum development and reform, the College of Education initiated a series of systematic studies of the graduates of the teacher education programs. These studies can be grouped into three broad areas as follows: (1) systematic surveys of the

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[1] Standards for Accreditation of Teacher Education. (Washington: The National Council for Accreditation of Teacher Education, 1970), p. 12.

[2] Ibid.

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graduates of the teacher education programs and employers of the graduates, (2) special studies designed to provide specific information about a particular area of concern, and (3) implementation of the Tennessee Technological University Teacher Evaluation Model. Studies under groups 1 and 2 were begun in 1970 and use of the Evaluation Model was begun in 1973. Following is a brief account of each of the three types of studies.

Surveys of Graduates and Employers

Each year, the graduates and the employers of the graduates for the past year are surveyed utilizing a specially designed survey instrument that is based on the objectives of the teacher education program. This instrument allows the graduate to rate his level of attainment of the objectives of the teacher education program and also allows for the principal to rate what he feels is the level of attainment by the graduate of the objectives of the teacher education program. These kinds of surveys also aid in identifying where graduates are teaching and what problems they may have in their first year of teaching. Also, mail surveys have been made of graduates after they have been teaching as much as five years. Surveys of this nature have been used with both undergraduates and those individuals who complete programs at the Master's and Educational Specialist's levels.

It has been found that these surveys provide much useful information that can be used in program improvement and curriculum development. Also, the surveys provide a base for designing other studies and providing initial input for carrying out the Tennessee Technological University Teacher Evaluation Model.

Special Studies

Throughout the past seven years, a variety of special studies have been conducted that have provided useful information toward meeting the NCATE standards and assisting with program development and redesign. Following is a partial list of studies that have been conducted. It is felt that the titles are self-explanatory with regard to use in meeting evaluation standards.

1. Predicting Quality Point Averages in Master's Degree Programs in Education
2. A Systematic Plan for the Restudy of a Teacher Education Program
3. The Relationship of Student Grade Expectations, Selected Characteristics, and Academic Performance for Education Students
4. Attitudes of Students Toward Education Courses
5. Human Relationship Skills and Teacher Effectiveness
6. Study of the Graduates of the Counselor Education Program of Tennessee Technological University
7. Study of the Graduates of the Ed.S. Program of Tennessee Technological University for the Period 1971 Through 1974
8. Performance of Principals as Evaluated by Themselves, Superintendents, and Teachers
9. Investigation of the Relationships Between Authoritarianism of Principals and Their Ratings of Teachers
10. Study of the Graduates of the Library Science Program of Tennessee Technological University 1969-1973

Tennessee Technological University Teacher Evaluation Model

Even though the studies outlined above have provided valuable information toward evaluation of the product (graduates) of the teacher education program of the University, there was a need for the implementation of a more comprehensive model that would allow for collecting more direct information from the graduates of the teacher education programs. In a monograph prepared in 1970 for the American Association of Colleges for Teacher Education, Dr. J.T. Sandefur, Dean of the College of Education at Western Kentucky University, suggested a model for evaluating the product of teacher education programs. This model was based on generalizations made from the research literature on effective teaching and suggested procedures and instrumentation for conducting a product evaluation of teacher education programs.

In 1973, Tennessee Technological University developed and implemented a longitudinal study, based on Sandefur's general model, for systematic data gathering and for making decisions about its programs in teacher education. In 1976, the study entered its fourth year. The specific purposes of the study have been to adapt Sandefur's basic model for evaluation of teacher education graduates of the University and to apply the results of the study to the process of making long-range plans for improving the total educational program of the University with particular emphasis on the teacher education programs.

Sandefur's model and that developed by Tennessee Technological University differ in several respects. Both models emphasize the gathering of data from four sources including the graduate, supervisors, students of the graduate, and by independent observers. Instrumentation varies between the two models as does the entry point of the graduates into the evaluation process. Implementation of Sandefur's Model at Western Kentucky University calls for the collection of initial data on subjects while they are student teaching. The subjects are then evaluated during their first, third and fifth year of teaching. Subjects of the Tennessee Technological University Model enter during their first year of teaching and are evaluated each year. It is anticipated that the subjects will be followed for at least five years. Data analyses and uses of the data have been different at both institutions. Following is a more detailed explanation of the implementation of Tech's Model.

During the first year each graduate participates in the study, he completes the California F-Scale Forms 45 and 40 (as a measure of personality), a self-rating device of the achievement of the objectives of the teacher education program, and a questionnaire designed to collect routine demographic information. Each graduate's transcript is analyzed and such information as standardized test scores (National Teacher Examinations, Graduate Record Examination, Kuder Preference Record, Miller Analogies Test, American College Test and others) and grade point averages in major field, professional education and psychology courses, etc. are collected.

Specially trained research assistants have visited in the school of each graduate on one or two occasions during each year of the study. The purposes of these visits were to collect data from the graduate, his principal, and his students. The principal of each graduate was interviewed and asked to complete the Teacher Evaluation by Supervisor Rating Form (developed at

Kansas State Teachers College) and the Principal's Questionnaire (an instrument designed to allow the principal to rate the level of achievement by the graduate of the objectives of the teacher education program of the University). The classroom of each graduate was visited for a minimum of a half-day and Ryans' Classroom Observation Record and Flanders Interaction Analysis techniques were employed by the research assistant to collect direct information about the graduate's teaching. The research assistants also requested that the students of the graduate complete one of two forms of the Student Evaluation of Teaching (developed at the University of Texas).

Data analyses have been confined largely to the application of the t-test and analysis of variance to determine differences across years and to correlational analyses to determine the relationships among the various variables. Factor analysis techniques have been employed on a limited basis with certain data sets. It should be kept in mind that data have been collected each year on as many as 150 variables. Following is a brief summary of some of the more important findings of the study and subsequent application of the findings in improving the teacher education programs of the University.

Results of the study have indicated that the graduates who have been followed for as much as three years have changed little during the period. Few significant differences have emerged from the data. Therefore, it could possibly be concluded that a teacher's style may be developed early in his career in the classroom. Also, there have been few differences noted when comparing each group of first year graduates across the three years of the study. When comparisons of the data were made with that reported in the literature, the graduates appeared to be at a level comparable to or above the 50th percentile and were exhibiting many of the characteristics of good teachers. It appeared that two of the best predictors of success of teaching were level of achievement on the Professional Education Test of the NTE and overall grade point average in professional education and psychology courses. Less authoritarian graduates appeared to be overall better classroom teachers. The graduates appeared to have deficiencies in such areas as classroom control, cognitive knowledge of the sciences, insight into the characteristics of behavior and effective use of community resources. Limited factor analysis of the data gathered as a part of the use of the Classroom Observation Record indicated a factor pattern similar to that obtained by Ryans' in previous studies.

Results of Studies

Application of the results of the various studies are beginning to emerge in the changing curriculum for the preparation of teachers at the University. Following are some examples of program modifications and changes that have resulted at the undergraduate and graduate levels.

Undergraduate Level

1. Addition of more practicum and laboratory experiences into the teacher preparation program of undergraduates. Included under this broad area is the inclusion of more and earlier contacts in working with children in the schools.

2. The course, Introduction to the Teaching Professions, (a freshman level course) has been reorganized and made more practical and less theoretical.
3. Courses in the history and philosophy and social foundations of education have been modified.
4. Overlap and duplication among courses has been eliminated.
5. Additional courses have been created to meet special needs of various groups.
6. A science methods course for elementary teachers was created.
7. Reconceptualization of the teacher's roles is taking place on a continuing basis.
8. Modifications in the requirements for a major in elementary education have taken place.
9. Secondary education major fields have been redesigned to include broad comprehensive teaching fields and sociology and geography have been eliminated as separate teaching fields.
10. The major in health and physical education has been divided into separate fields of study, i.e., a major in health or a major in physical education.
11. Course work in the Department of Educational Psychology and Counselor Education is being redesigned and placed on a competency basis.

Graduate Level

1. The field experience courses of several of the programs of study have been modified to make them more meaningful and of value to the individual students.
2. Additional laboratory and field experiences have been introduced in certain curricula.
3. Evaluative data have been used by the Department of Educational Psychology and Counselor Education in the design of a competency based program of study for prospective counselors and school psychologists.
4. Requirements for admission and the use of certain screening devices have been modified.
5. Specific courses have been reorganized and made more practical by relating theory to practice.
6. The research methods course has been altered.
7. The core curriculum of the advanced programs has been studied and modified.
8. The course in educational statistics is now more closely associated with the research course.
9. Library resources have been improved and made more available to students taking courses off campus.
10. The courses in curriculum have been re-evaluated and components have been expanded to relate to individual needs of students.

Future Plans

It is anticipated that the study will be continued on an indefinite basis and that the trends that are beginning to emerge can be followed on a long-term basis. In turn, it is felt that the problems associated with teacher evaluation and implementation of the Recommended Standards for teacher accreditation are being met. Through the use of more sophisticated statistical techniques, additional data analyses are planned. A continual plan of monitoring the literature has been implemented and it is anticipated that different instrumentation may be introduced into the study in the near future.

Project Costs

Following is a summary of the project costs at Tennessee Technological University for 1975-76. The costs for the studies have remained nearly constant since the implementation of the Evaluation Model. The next section of this paper will provide information for implementation of an alternate model at reduced costs.

Estimated Yearly Costs for Conducting Followup Evaluation Studies at Tennessee Technological University

3 1/2-time Graduate Assistants for 9 mos. academic year at $2,250 each	$6,750
1/4-man year for Secretary at $5,800/yr.	1,450
Mileage for visitation in classrooms 7,000 miles at $0.15/mile	1,050
Communications (postage and telephone)	450
Supplies and Printing (paper, envelopes, forms, etc.)	500
Total Direct Costs	$10,200
1/4-man year for Professional Employee	4,500
Indirect Costs (overhead)	4,200
Total for all Costs	$18,900

Elimination of the requirement for extensive visitation could potentially reduce the Direct Costs for the project to about $4,500 and the Total for all Costs to about $10,000.

Implementation of Followup Studies on Limited Budgets

Reasonable followup studies can be implemented on a limited budget that can provide very useful information. Followup mail surveys can be carried out at a cost of about $0.40 per subject (exclusive of personnel costs). Such surveys are essential for gathering routine information for the development and implementation of larger studies such as the Tennessee Technological University Teacher Evaluation Model.

The Evaluation Model can be implemented at smaller institutions with limited budgets. As was noted earlier, data about the graduates are collected from four sources, i.e., the graduate, his supervisor or principal, students of the graduate, and independent observers. The largest costs are associated with sending independent observers to work in the schools to gather data on a firsthand basis. If this later step can be eliminated, the costs associated with the project can be greatly reduced. At the present time, studies are underway to predict the results fo the data gathered by independent observers based on data from the other sources.

Personal data about graduates can be gathered by mail surveys, from university records and by way of telephone calls. Information from employers can be gathered through structured mailed questionnaires and telephone calls. Information from students of the graduates can be gathered by mailing survey instruments to teachers and in turn asking them to administer these to their students. Direct evidence of classroom interaction can be collected by such individuals as student teaching supervisors or principals (it should be noted that these individuals must be carefully trained). Also data can be collected by use of audio tapes or video taping in each teachers classroom. Again, these items can be handled by use of the mail system.

Although the validity and reliability of the data may be lower, it is felt that much useful research data can be gathered, using the above techniques, that will aid in staisfying NCATE standards. In turn, and most important, it is felt that improved systems for the training of teachers will result.

Source for Additional Information

Sandefur, J.T. An Illustrated Model for the Evaluation of Teacher Education Graduates. Washington: American Association of Colleges for Teacher Education, 1970.

TENNESSEE TECHNOLOGICAL UNIVERSITY

Summary Sheet

Follow-up and Sampling Procedures

The program was initiated in 1973 with the intention of following a group of graduates for five years. Additional groups of graduates at both the bachelor's and master's levels have been added to the study each fall. All graduates from the previous year who are teaching within an 80 mile radius of the University are asked to participate in the study (over 75% of all graduates are teaching within the defined area). Initial sample size has varied from 35 to 55 individuals (about 25% of the total number of individuals in the classroom).

Instrumentation Utilized

Instrumentation has consisted largely of those items described in Table 1. Career baseline data have been gathered with the use of a local instrument. Certain areas, such as principal/supervisor evaluations have been supplemented with other locally produced devices.

Data Collection Procedures

Data collection procedures have been the responsibility of three graduate assistants. Initially, these individuals receive intensive training in the fall of each year on the purposes of the project, instrumentation and methods of administration and procedures for conducting the project. All data are generally collected in a one-day visit to a school. The graduate assistants observe subjects using various classroom observation instruments, interview principals and administer instrumentation to the students of the subjects. Subjects who are participating in the study for the first year are generally visited in the late winter and spring. Subjects who have been in the study previously are usually visited in the late fall and early winter. All subjects are visited each year.

Administrative Procedures

The project is administered under the office of the Associate Dean of the College of Education. Funds for conducting the project are derived from the instructional budget of the college (less than 0.5%). All work is conducted by the staff of the office. Computer facilities are available on the campus of the University.

Feedback Procedures

Reports of all studies are routinely prepared and circulated to all faculty and staff associated with the teacher education programs of the University. Departmental faculty analyze the reports and make recommendations for program changes and improvements within their particular area. A college-wide curriculum committee also reviews all reports and documents for the purposes of progam improvement and modification. On occasion, these groups may request special studies in a particular area.